

Claims

What is claimed is:

Sub A 10
5 1. A computer-implemented method for accessing multiple types of electronic content, comprising the steps of:

requesting a list of available services for a client program module;

creating a list of services available to the client program module;

10 selecting a service from the list;

creating a service from a plurality of program objects that are enumerated in the list; and

providing the client program access to the service, wherein the service manipulates data within the client program module or the service generates some output data that is accessible within the client program module.
15

2. The method of claim 1, wherein the step of creating a service further comprises the steps of:

obtaining loader identification data and location data for a program object from a local storage medium; and
20

retrieving program object data from a non-local storage medium corresponding to the loader identification data and location data for the program object.

25 3. The method of claim 2, wherein the local storage medium comprises a cache memory device.

4. The method of claim 2, wherein the loader identification data and location data are passed according to one of an exchange method, a set attribute method, and a get attribute method in combination with a variant parameter, whereby arbitrary data content is accessible to the client program module.

5. The method of claim 1, wherein the step of creating a list of services further comprises the steps of:

comparing privilege data of the client program module with privilege data of objects stored in a local storage medium; and
in response to a match between privilege data of the client, recording each respective match in the list.

6. The method claim 1, wherein the step of creating a list of services further comprises the steps of:

comparing a cache file with a system registry;
updating the cache file to reflect the system registry;
determining services in the cache file that match privilege IDs of the client program module; and
compiling a list of object locations, loader identification data, and objects in hierarchical order from the cache file.

7. The method of claim 1, wherein the step of creating a service further comprises the steps of:

accessing a local storage medium containing object chaining relationships and object properties; and
constructing a container of objects forming the service based upon the object chaining relationships and object properties.

13. A computer-implemented method for accessing arbitrary data content, comprising the steps of:

creating a service from a plurality of reusable program objects;

for each reusable program object, obtaining loader identification data and location data for a respective program object from a local storage medium;

retrieving program object data from a non-local storage medium corresponding to the loader identification data and location data for the program object;

adding the service to an existing client program module; and
accessing arbitrary data content with the client program module via the service, whereby the arbitrary data content was unavailable to the existing client program module prior to adding the service.

14. The method of claim 13, wherein the loader identification data and location data are passed according to one of an exchange method, a set attribute method, and a get attribute method in combination with a variant parameter.

15. The method of claim 13, further comprising the steps of:

for each object, determining if a master-slave relationship exists;

if a master-slave relationship exists for an object, then
obtaining object location data and loader identification data for a slave object and creating the slave object prior to creating a corresponding master object; and

if a master-slave relationship does not exist for an object, then creating the object.

16. A method for translating data from a first language to a second language, comprising the steps of:

requesting a list of available translation services for a client
program module;

creating a list of translation services available to the client
program module;

creating a translation service from a plurality of program objects that are enumerated in the list; and

translating data from the first language to a second language
with a service selected from the list.

17. The method of claim 16, wherein the step of creating a service further comprises the steps of:

obtaining loader identification data and location data for a program object from a local storage medium; and

retrieving program object data from a non-local storage medium corresponding to the loader identification data and location data for the program object.

18. The method of claim 17, wherein the loader identification data and location data are passed according to one of an exchange method, a set attribute method, and a get attribute method in combination with a variant parameter, whereby arbitrary data content is accessible to the client program module.

19. The method of claim 17, wherein each program object comprises one of a stemmer object, a look-up object, and a character set conversion object.

20. The method of claim 17, further comprising the steps of:

storing loader identification data and location data for a program object on a local storage medium and a non-local storage medium; and

5

comparing data of a local storage medium with data on the non-local storage to determine if additional services have been added.

THE UNIVERSITY OF CHICAGO